# Engineering Notebook Rubric

**Rubrics are strictly confidential**; they are not shared beyond the Judges/Judge Advisor and shall be destroyed at the end of the event.

Team #: _____

Program level: ☐ Elementary   ☐ Middle   ☐ High or VEX U

Judges: _____

**Directions:** Write the points in each row for the criterion that best describes the performance of the Engineering Notebook on each topic. Total the points.

| Topic | | Criteria | | | Points |
|---|---|---|---|---|---|
| | | **Expert** (4-5 points) | **Proficient** (2-3 points) | **Emerging** (0-1 points) | |
| **Engineering Design Process** | Identify game and robot design challenges and goals | Identifies the game challenge or robot design challenge in detail at the start of each design process cycle with words and pictures. States the goals for accomplishing the challenge. | Identifies the challenge at the start of each design cycle. Lacking details in words, pictures, or goals. | Does not identify the challenge at the start of each design cycle. | |
| | Brainstorm and diagram or prototype solutions | Lists three or more possible solutions to the challenge with labeled diagrams. Citations provided for ideas that came from outside sources such as online videos or other teams. | Lists one or two possible solutions to the challenge. No citations provided for ideas that came from outside sources. | Does not list any solutions to the challenge. | |
| | Select the best solution and plan | Explains why the solution was selected through testing and/or a decision matrix. Fully describes the plan to implement the solution. | Explains why the solution was selected. Mentions the plan. | Does not explain why the solution was selected or does not mention the plan. | |
| | Build and program the solution | Records the steps to build and program the solution. Includes enough detail that the reader could recreate the solution following the steps in the Notebook. | Records the key steps to build and program the solution. Lacks sufficient detail to recreate the solution. | Does not record the key steps to build and program the solution. | |
| | Test solution | Records all the steps to test the solution, including test results. | Records the key steps to test the solution. | Does not record the steps to test the solution. | |
| | Repeat design process | Shows that the design process is repeated multiple times to improve performance on an individual design goal or overall robot or game performance. | Shows that the design process is not often repeated for individual design goals or overall robot or game performance. | Does not show that the design process is repeated. | |
| Usefulness and repeatability | | Records the entire design and development process in such great clarity and detail that the reader could recreate the project's history and build the current robot from the notebook. | Records the design and development process completely but lacks sufficient detail to fully recreate the entire project or robot. | Does not record the design and development process or lacks sufficient detail to understand the design process. | |
| Record of team and project management | | Provides a complete record of team and project assignments; written in ink; notes from team meetings including goals, decisions, and accomplishments; name or initials of author; each page numbered and dated. Design cycles are easily identified. Includes Table of Contents and/or Index so anyone can easily locate needed information. | Records most of the information listed at the left. Not written in ink. Organized so that team members can locate most of the needed information. | Does not record most of the information listed at the left. Not organized; needed information difficult to locate. | |
| Notebook construction | | Five (5) points if notebook is bound. Notebook must have been bound before any entries were made in it. | Zero points for any other notebook construction. | Zero points for any other notebook construction. | |
| Describe a few of the best features of the Engineering Notebook: | | | | Total points for Engineering Notebook | |

# Team Interview Rubric

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Team #:_____
Program level: □ Elementary   □ Middle   □ HS or VEX U
Judges: _____

**Directions:** Write the points in each row for the criterion that best describes the quality of the interview. Total the points.

| Topic | Criteria | | | Points |
|---|---|---|---|---|
| | **Expert** *(4-5 points)* | **Proficient** *(2-3 points)* | **Emerging** *(0-1 points)* | |
| Design process and Engineering Notebook | Students clearly explain all aspects of the design process and how they recorded their use of the design process in the Notebook. | Students can explain most aspects of the design process and how they recorded their use of the process. | Students can explain only limited aspects of the design process and how they recorded their use of the process. | |
| Game strategies and robot designs | Students can describe three or more game strategies and robot designs that were considered; students can fully explain how and why the current game strategy and robot design were chosen. | Students can describe two game strategies and robot designs that were considered; students can explain how and why the current game strategy or robot design were chosen. | Students can describe only their current game strategy and design, or they cannot explain how and why the current game strategy or robot design were chosen. | |
| Project and team management | Students can explain how team progress was tracked against an overall project timeline, and how students were assigned to tasks based on their skills and availability; students can explain management of material resources. | Students can explain how team progress was monitored, or how students were assigned to tasks, or management of material resources. | Students cannot explain how team progress was monitored or how students were assigned to tasks or how material resources were managed. | |
| Teamwork and communication | Students can explain how multiple team members contributed to the robot design and game strategy. All students answer questions independently. | Students can explain how most team members contributed to the robot design and game strategy. Students support each other as needed to answer questions. | Only one team member answered questions or contributed to the robot design process. | |
| Respect and courtesy | Students answer respectfully and courteously. Students make sure each team member contributes. Students wait to speak until others have finished. | Students answer respectfully and courteously. Some students attempt to contribute but are interrupted by other students. | Students do not answer respectfully and courteously. Students interrupt each other or the Judges. | |

| Describe a few of the best features of the team interview: | | |
|---|---|---|
| | Total points for Team Interview: | |
| | Total points for Engineering Notebook: | |
| | Total points for both rubrics: | |